[0022] **FIG. 3** is an exploded perspective view of the input device of **FIG. 1**;

[0023] **FIG. 4** is an overall perspective view of a PC, which shows a position at which the input device of **FIG. 1** is disposed;

[0024] **FIG. 5** is a longitudinal sectional view of the essential portion of the PC of **FIG. 4**;

[0025] **FIG. 6** is an exploded perspective view showing details of the input sensor of **FIG. 1**;

[0026] **FIG. 7** is a circuit wiring diagram showing an X electrode layer of **FIG. 6**;

[0027] **FIG. 8** is a plan view showing through holes formed in an insulating film of **FIG. 6**;

[0028] **FIG. 9** is a circuit wiring diagram showing a Y electrode layer of **FIG. 6**;

[0029] **FIG. 10** is a plan view showing another embodiment of a pointing section; and

[0030] **FIG. 11** is a longitudinal sectional view showing a conventional input device.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] FIGS. **1** to **3** show an embodiment of an input device according to the present invention. In this embodiment, an electrostatic-capacitance-type coordinate input device **1** used as a pointing device for a personal computer (PC) has an input sensor **2** formed from a flexible material such as a film. This input sensor **2** is disposed on the rear surface of a housing **4** in a PC **3**.

[0032] The input device **1** is of an electrostatic-capacitance type. As shown in **FIG. 5**, when a conductor such as a finger **11** is brought into contact with or in close proximity to the input sensor **2**, variations in electrostatic capacitance occur. By electrically detecting the capacitance variations, the position of the finger **11**, etc., can be detected.

[0033] The input sensor **2**, as shown in **FIGS. 4 and 5**, is bonded on the rear surface of a planar housing **4** in front of a keyboard **5** in the PC **3**, is fixed by using a double-sided bonding tape **6** or a bonding agent, and is not seen from the surface of the PC **3**. The housing **4** is formed of an insulating material made of a molded resin. The thickness at the place where the input sensor **2** is bonded is less than or equal to approximately 2 mm, and more preferably, is less than or equal to 1 mm. Since the input sensor **2** is of an electrostatic capacitance type, when the proximity distance to the finger **11**, etc., is greater than 2 mm, the sensitivity becomes poor, and therefore, the proximity distance must be less than 2 mm.

[0034] As shown in FIGS. **1** to **3**, it is also possible to form a curved section **4**A in a portion of the housing so as to bond the input sensor **2** on the rear surface of the curved section **4**A. This is because the input sensor **2** can be bonded along the curved surface of the curved section **4**A since the input sensor **2** is formed of a film, etc. Furthermore, if the input sensor **2** is bonded on the rear surface of the curved section **4**A in this manner, by an operator tracing the surface of the curved section **4**A when performing a pointing operation, the operation feeling is improved more than when tracing a planer surface.

[0035] Since the input device **1** is formed of the input sensor **2** in the form of a thin film and can be bonded on the rear surface of the housing **4**, the input device **1** can be placed anywhere on the housing **4** of the PC **3**, the flexibility of design is improved, and there are no limitations of design.

[0036] On the other hand, the details of the input sensor **2** are shown in FIGS. **6** to **9**.

[0037] In FIGS. **6** to **9**, the input sensor **2** has a flexible film substrate **10**. This film substrate **10** is formed by an insulating synthetic resin sheet, such as PET (polyethylene terephthalate). In this film substrate **10**, as shown in **FIG. 6**, an extension section **11** whose one side in its longitudinal direction protrudes toward the side is formed.

[0038] An X electrode layer **20**X is provided on the underside of the film substrate **10**. In the X electrode layer **20**X, as shown in **FIG. 5**, an X-direction driving electrode **20**Xd, in which a plurality (**16**) of X electrodes x**1**, x**2**, . . . , x**15**, x**16** are formed in parallel at a predetermined spacing in the X direction, is formed. One end of each of the X electrodes x**1**, x**2**, . . . , x**15**, x**16** is formed so as to extend up to the extension section **11**.

[0039] In the X electrode layer **20**X formed in the film substrate **10**, a dummy electrode xd (a total of 15) is alternately formed between electrodes of the X electrodes x**1**, x**2**, . . . , x**15**, x**16**. As a result of providing the dummy electrodes xd in this manner, for example, an influence when water is stuck to the input sensor **2** can be scattered.

[0040] On the film substrate **10**, a grounding electrode **21** extending up to the extension section **11** along the edge portion of the film substrate **10** is formed flush with the X-direction driving electrode **20**Xd. Furthermore, in the space formed between the X-direction driving electrode **20**Xd of the film substrate **10** and the grounding electrode **21** thereof, X switching electrodes **22**, **23**, and **24** formed of a plurality of electrodes are formed. The X-direction driving electrode **20**Xd, the grounding electrode **21**, the X switching electrodes **22**, **23**, and **24** are all formed by a screen printing method using a silver paste or a silver-based paste.

[0041] The surface of each of the electrodes **20**X, **21**, **22**, **23**, and **24** is provided with a flexible insulating film **12** which is formed by coating or printing an insulating resin (resist). This resist can be selected from, for example, a polyamide type, an epoxy resin type, a polyurethane type, and a polyester type, etc. At this time, in the insulating film **12**, as shown in **FIG. 8, a** plurality of through holes h**1**, h**2**, . . . , h**12**, k**2**, k**4**, . . . , k**10**, m**2**, m**4**, . . . , m**10**, and s**2** are formed. These through holes are formed at positions corresponding to one of the end portions of the X switching electrodes **22**, **23**, and **24**. The electrodes shown in **FIG. 7**, in which the through holes corresponding to **FIG. 8** are not formed, are electrodes for inspection purposes.

[0042] As shown in **FIG. 9, a** Y electrode layer **20**Y is provided on the surface (under surface) of the insulating film **12**. In the Y electrode layer **20**Y, a Y-direction driving electrode **20**Yd formed of a plurality (12) of Y electrodes y**1**, y**2**, . . . , y**11**, y**12** is formed in a direction intersecting at right angles to the X-direction driving electrode **20**Xd. One end of each of the electrodes y**1**, y**3**, y**5**, y**7**, y**9**, and y**11** of some of the Y electrodes y**1**, y**2**, . . . , y**11**, y**12** is formed so as to extend from both sides on the right and left (X direction) up to the position of a predetermined through hole shown in **FIG. 8**.